September Nuclear Materials Subgroup Highlights

The Hanford STCG Nuclear Material (NM) Subgroup met on September 26, 2000 in the EESB Stampede Room, at 1:00 p.m.

Jim Sloughter gave an overview of the S&T needs to be sent in as NM needs this year. Most of the needs are from PFP projects. Also to be included in the subgroup review are the spent nuclear fuel (SNF) needs and WESF needs. There are D&D needs included in the PFP project listings as the D&D Focus Area (DDFA) is more likely to be funding these needs rather than the NMFA. A question arose as to whether we should prioritize the needs. Jim responded that there is a rating system already in place that categorizes each need as a 1, 2, or 3. A ranking of 1 means the technology is critical to the success of the Accelerated Cleanup Path to Closure (ACPC). A 2 rating means the technology provides substantial benefits to ACPC projects and a 3 means the technology provides opportunities for significant but lower cost savings or risk reduction. The needs noted as priority 1 should all have Technology Insertion Points (TIPs) with them. The needs will be sent to EM-50 but also put out on the web for commercial vendors and others to see if they can help us meet our needs.

Mark Gibson reviewed the specific NM needs for this year. Last year there were eleven needs on the list of which six were deleted from this year's list and five were updated.

The need, RL-99-004-NM, "Process Optimization - Extension of Pu Precipitation Process for Hanford's PFP" is still on the list even though it is partially funded by the NMFA. PNNL is working with PFP engineers on this now.

The need, RL-00-005-NM, "Moisture Measurement on Stabilized Material for 3013 Container Storage" may be met soon if equipment that is now being installed works properly.

The need, RL-00-006-NM, "Long Term Gas Generation Surveillance" deals with the monitoring of storage containers. PNNL has sent in a proposal to EM-50 to meet this need using RF Tag technology and we are waiting word on whether this will be funded.

The need, RL-00-011-NM, "Furnace Time Cycle Improvement - PFP" is also being worked on now. The NMFA has funded PNNL to develop a hot box technology to meet this need.

Mark Gibson briefly reviewed each of the new NM needs being added this year. RL-NM-New02, "In Line Pu Concentration Measurement for $Mg(OH)_2$ Precipitation Filtrate" is a call for automatic instrumentation to replace the manual sampling used now. This was rated a priority 3 need. Another need, RL-NM-New03, "Chloride Wash Process to Pretreat Feed to Thermal Stabilization" is a priority 1 need and

deals with high chloride waste streams that need to be stabilized. A TIP is now being written for this and LLNL is working on this need as well. The need, RL-NM-NEW05, "Improved Throughput Instrumentation for NDA of SNM Items" is a priority 2 need and deals with making the NDA process quicker for SNM items. Both RL-NM-NEW06, "Ability to NDA Large Burial Boxes and Long Pipe Sections with Low Plutonium Concentrations" and RL-NM-New07, "More Accurate, Quicker NDA of Gloveboxes and HVAC for Plutonium Holdup" deal with speeding up the separation of TRU from other wastes and have priority 3 ratings. The need, RL-NM-NEW09, "Ability to Open Pressurized 3013 Containers" is a Complex-wide issue and is a priority 3. The need, RL-NM-NEW10, "Item Transfer Method to Replace Current Sealout Techniques" is a priority 3 need and deals with a way to speed up project work.

Bruce Makenas reviewed the SNF S&T needs for this year. There are three new technology needs and one new science need this year for SNF. Three of last year's technology needs dealing with characterization and decontamination of the K Basins will be sent to the D&D Subgroup as they fit in better with those needs rather than the NM needs.

The need, RL-SNF-07, "Retrieval and Immobilization of Minute Debris and Fuel from K-Basin" is the only remaining need from last year and is a priority 1 need with a TIP associated with it. The three new SNF needs are all priority 3 needs. The need, RL-SNF-NEW08, "CSB Storage Vault Inspection", deals with the need for remotely inspecting the canister storage vault. The needs, RL-SNF-NEW09, "Improved Multi-Canister Overpack (MCO) Gas Sampling System" and RL-SNF-NEW10, "Multi-Canister Overpack (MCO) Interrogation Method", both deal with the MCO but the gas sampling system is needed very soon so storage can safely take place while the interrogation method need is for the future after the MCOs are already in storage. There is a need, RL-SNF-NEW12, "TRU Ion Exchange Columns Disposition", that is a priority 1 that will be sent to the Mixed Waste Subgroup for inclusion with their needs.

There is also one new science need, RL-SNF-NEW13-S, "Oxidation and Hydride Formation in U Metal SNF" that is applicable to N-Reactor Spent Fuel. The repository needs this information to safely store the fuel.

The NM Subgroup members should review the needs and get all comments back to Jim Sloughter by October 9. The complete list of needs will be sent out to all members for review in a few days. Also, to be included in the list are two D&D needs for WESF that deal with Cs/Sr capsule leak detection and capsule integrity assessment. These two needs were in the D&D listing last year but belong in the NM listing as the NMFA will be dealing with these issues now.

The NMFA will be visiting Hanford on October 11 and 12 and subgroup members are invited to attend sessions that interest them. Mark Gibson and Jim Sloughter are putting together the final agenda for this visit and a copy will be sent out to all

subgroup members. A presentation by PNNL PI's for the two projects funded by the NMFA will be added on the afternoon of October 12.

Proposals for FY02 funding are still being worked on and will be sent in soon to the NMFA. Dave Robertson of PNNL is participating in weekly teleconferences with the NMFA. At this time, the multi-year MYPP for the NMFA is being prepared. Dave is a product line manager for Long Term Storage and has received $40K from the NMFA to work in this role. Dave distributed copies of a listing of the NMFA Core Team that included contact and responsibility information for those involved. Dave asked that we put together a Hanford Nuclear Materials Core Team listing and the subgroup agreed that this was to be done.

Allison Wright and Bob Holt reviewed the information they will be presenting to the STCG Management Council at the meeting on September 28.

Nuclear Materials Subgroup Meeting Attendees - 09/26/00

Bill Bonner	PNNL	372-6263
Mark Gibson	FH	373-4869
Thomas Halverson	FH	376-8823
Bob Holt	RL-SFO	376-9989
Bruce Makenas	FH/SNF	376-5447
Bruce Reynolds	PNNL	376-2342
David Robertson	PNNL	375-3793
James Sloughter	FH	375-2413
Nancy Uziemblo	Ecology	736-3014
Oliver Wang	Ecology	736-3040
Steve Weakley	PNNL	372-4275
Allison Wright	RL-MDD	373-7303